

## JOINT PUBLIC NOTICE

JUL 22 2013

DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT  
CORPS OF ENGINEERS  
REGULATORY FUNCTIONS BRANCH  
P.O. BOX 60267  
NEW ORLEANS, LA 70160

STATE OF LOUISIANA  
DEPARTMENT OF ENVIRONMENTAL  
QUALITY  
OFFICE OF ENVIRONMENTAL  
SERVICES  
P.O. BOX 4313  
BATON ROUGE, LA 70821-4313

STATE OF LOUISIANA  
DEPARTMENT OF NATURAL  
RESOURCES  
OFFICE OF COASTAL MANAGEMENT  
P.O. BOX 44487  
BATON ROUGE, LA 70804-4487

Phone (504) 862-2224

Fax (504) 862-2574

Phone (225) 219-3225

Fax (225) 325-8250

Phone (225) 342-8917

Fax (225) 342-9439

Email sara.krupa@la.gov

COE REVIEWER:  
**Bobby Quebedeaux**

DEQ REVIEWER:  
**Jamie Phillippe**

OCM REVIEWER:  
**Sara Krupa**

COE NUMBER:  
**MVN- 2011- 1611- WJJ**

WQC NUMBER:  
**110623- 02**

CUP NUMBER:  
**P20110563**

**NAME:** **SOUTH LAFOURCHE LEVEE DISTRICT**  
c/o ALL SOUTH CONSULTING ENGINEERS  
652 PAPWORTH AVENUE  
METAIRIE, LA 70005  
Attn: Stephen Smith

**LOCATION:** **Lafourche Parish, LA;** Near Cut Off, LA; T19S-R20E, Sections 17, 16, 9, 8, 5, 4; T18S-R20E, Sections 33, 28, 27, 22, 15, 14, 13; T18S-R21E, Sections 54 and 53; P.O.B. Pointe-Aux Chien Tie-in Levee (under construction) - Lat 29° 25' 12.6"N / Long -90° 26' 52.1"W, P.O.E. existing South Lafourche Protection Levee - Lat 29° 30' 55.9"N / Long -90° 21' 19.0"W

**DESCRIPTION:** Proposed construction of approximately 55,450 linear feet of earthen protection levee along the alignment of Reach K and Reach L of the Morganza to the Gulf Levee System. This proposed levee system will have a base width of approximately 90', and it will be constructed to a height of approximately +9.0'. Two existing water control structures along Grand Bayou Canal and one pump station shall remain unmodified. One Sector Gate and one Tainter Gate will be installed along the northern segment. Approximately 30,000 cubic yards of topsoil/dirt will be hauled in and 2,009,000 cubic yards of material will be excavated onsite and used as fill to construct this levee system.  
Mitigation Project: Proposed construction 41 acres of terraces and the creation of 40.5 acres of marsh for the purpose of compensatory mitigation for impacts marsh habitat resulting from activities associated with the construction of the Morganza to the Gulf Levee Reach K and L project. The total levee project area is approximately 132 acres for the levee construction and 210 acres for excavation - approximately 69 acres of wetlands, 150 acres of non-wetlands, and 120 acres of waterbottoms will be impacted by the proposed work. The terrace mitigation project may affect approximately 150 acres of waterbottoms, and the marsh creation mitigation project may affect approximately 100 acres of waterbottoms. This project is located on and/or near the Pointe-Aux-Chenes WMA.

NOTICE the Louisiana Department of Natural Resources, Office of Coastal Management (OCM) has received the above application for a Coastal Use Permit (CUP) in accordance with the State and Local Coastal Resources Management Act of 1978, as amended, (Louisiana R.S. 49:214.21-214.41), and the rules and regulations of the Coastal Resources Program. Applications for the proposed work may be inspected at 617 North 3rd Street, Room 1078, Baton Rouge, LA or on the OCM web page at: <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=591>. Copies may be obtained upon payment of cost of copying. Written comments, including suggestions for modifications or objections to the proposed work and stating the reasons thereof, are being solicited from the public. Comments must be received within 25 days of the date of publication of this notice. Comments should be uploaded to our electronic record, but may be mailed, faxed or emailed to the designated OCM Reviewer. All comments must contain the appropriate application number and the commenter's full name and contact information.

Application also has been made to the Louisiana Department of Environmental Quality, Office of Environmental Services for a Water Quality Certification in accordance with La. R.S. 30.2074(A)(93), and Section 401 of the Clean Water Act (P.L. 95-217). Additional information is on file with the above office, and may be inspected at any time between 8:00 a.m. and 4:30 p.m. weekdays. Copies may be obtained upon

payment of cost of copying. Comments concerning the application can be filed with the Office of Environmental Services within 20 days of this notice to the following address: Office of Environmental Services, P. O. Box 4313, Baton Rouge, LA 70821-4313.

The public comment period for Coastal Use Permit and Water Quality Certification applications begins on the date of publication of notice in the official journal (The Advocate), in accordance with LAC 43:I. 723(C)(5)(c). OCM will provide this date on request.

Additionally, interested parties are hereby notified that application has been received by the District Engineer for a Department of the Army permit to authorize the following pursuant to Section 404 of the Clean Water Act (86 Stat. 816: 33 USC 1344) and/or Section 10 of the River and Harbor Act of 1899 (33 USC 403). The notice and notice policies of the Corps of Engineers - New Orleans District can be found on their webpage at: <http://www.mvn.usace.army.mil/ops/regulatory/publicnotices.asp>.

Any person may request, in writing, within the comment period specified in this notice, that a State or Federal public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing and must contain the name and contact information of the requester.

Attached Plats:	1)	P20110563	Notice Plats	06/14/2011
	2)	P20110563	Notice Plats	10/03/2012
	3)	P20110563	Notice Plats	07/15/2013
	4)	P20110563	Notice Plats	05/21/2013

VICINITY MAP  
SCALE: 1"=10,000'

GRAND BAYOU/CUTOFF CANAL

-WATER DEPTH=(±)6.0' LOW TIDE  
-WATER DEPTH=(±)7.5' HIGH TIDE

MEAN HIGH WATER (M.H.W.)=(±)1.5'  
MEAN LOW WATER (M.L.W.)=(±)0.0'

T19S-R20E Sections 17, 18, 9, 8, 5 & 4  
T18S-R20E Sections 33, 28, 27, 22, 15, 14 & 13  
T18S-R21E Sections 54 & 53

BEGIN PROJECT  
LAT: 29° 25' 12.6"  
LONG: 90° 26' 52.6"

END PROJECT  
LAT: 29° 30' 55.9"  
LONG: 90° 21' 19.0"

ROUTE AUX CHENES

PROJECT VICINITY

Hwy 24

BAYOU LAFOURCHE

MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
VICINITY MAP

DATE  
04-08-2013  
SCALE  
1"=10,000'  
JOB NO.  
041-001-01

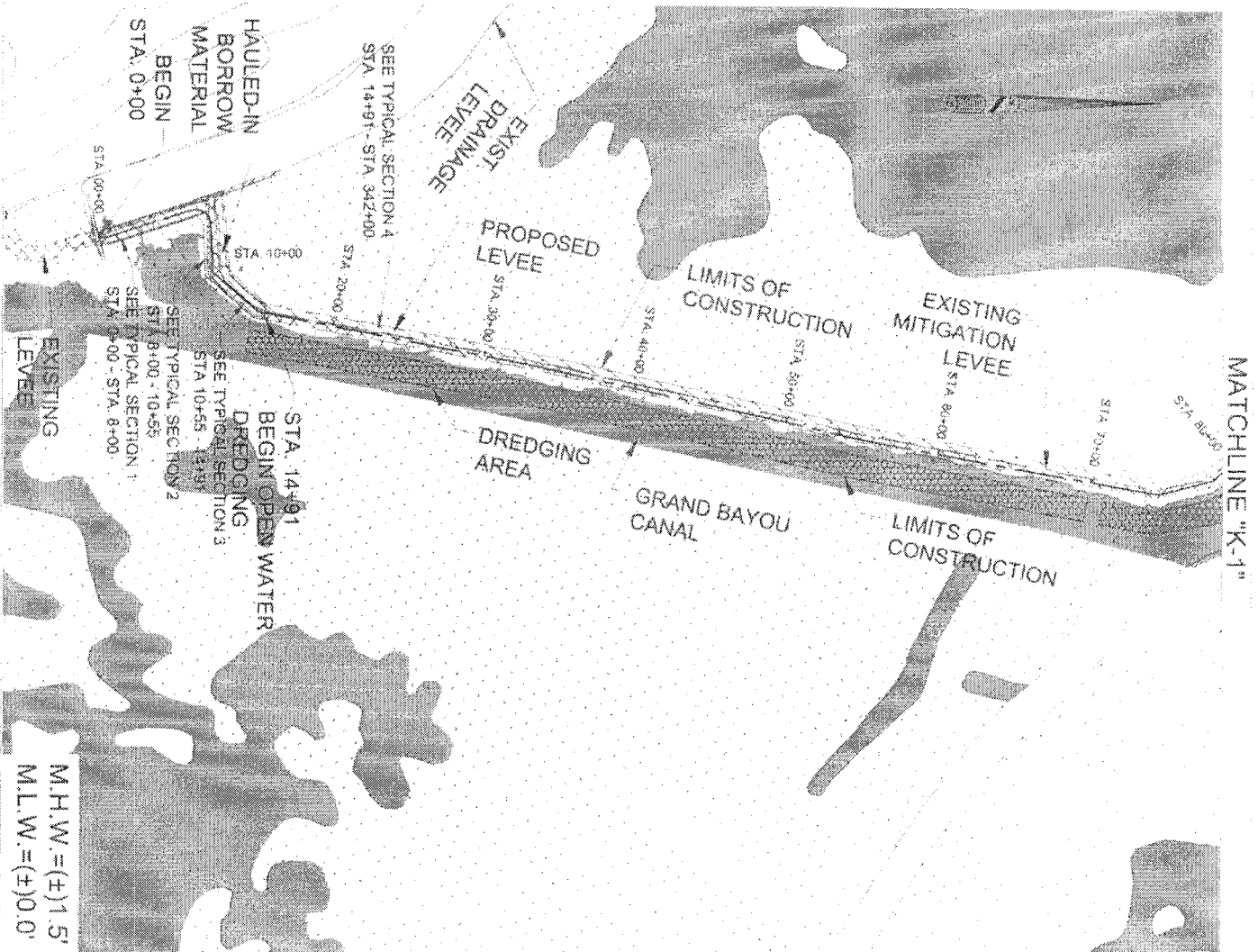
DESIGNED BY  
BDE  
DRAWN BY  
TPR  
CHECKED BY  
BDE



ALL SOUTH  
CONSULTING  
ENGINEERS, L.L.C.  
952 PAMPOLITH AVENUE  
METairie, LA 70005  
(504) 882-2780

PROJECT NO. 000-XXX-00

DATE	REVISION	APPROVED



**WETLAND IMPACTS:**

**-LEVEE CONSTRUCTION:**

TOTAL LEVEE AREA = (131.62 AC)  
 EXIST. LEVEE AREA = (50.2 AC)

TOTAL WETLAND IMPACTS = (68.6 AC)

-MARSH AREA IMPACTED = (56.7 AC)

-BRACKISH MARSH = (40.8 AC)

- FRESHWATER / INTERMEDIATE MARSH = (15.9 AC)

-OPEN WATER IMPACTED = (11.9 AC)

**-EXCAVATION AND DREDGING:**

TOTAL EXCAVATION AREA = (210 AC)

-NON-WETLAND PASTURE AREA = (102 AC)

-OPEN WATER DREDGING = (108 AC)

**ESTIMATED QUANTITIES:**

OPEN WATER DREDGING = (935,000 CY)

ON-SITE BORROW EXCAVATION = (1,074,000 CY)

HAULED-IN OFF-SITE BORROW = (30,000 CY)

MAXIMUM VESSEL DRAFT = 5.0'

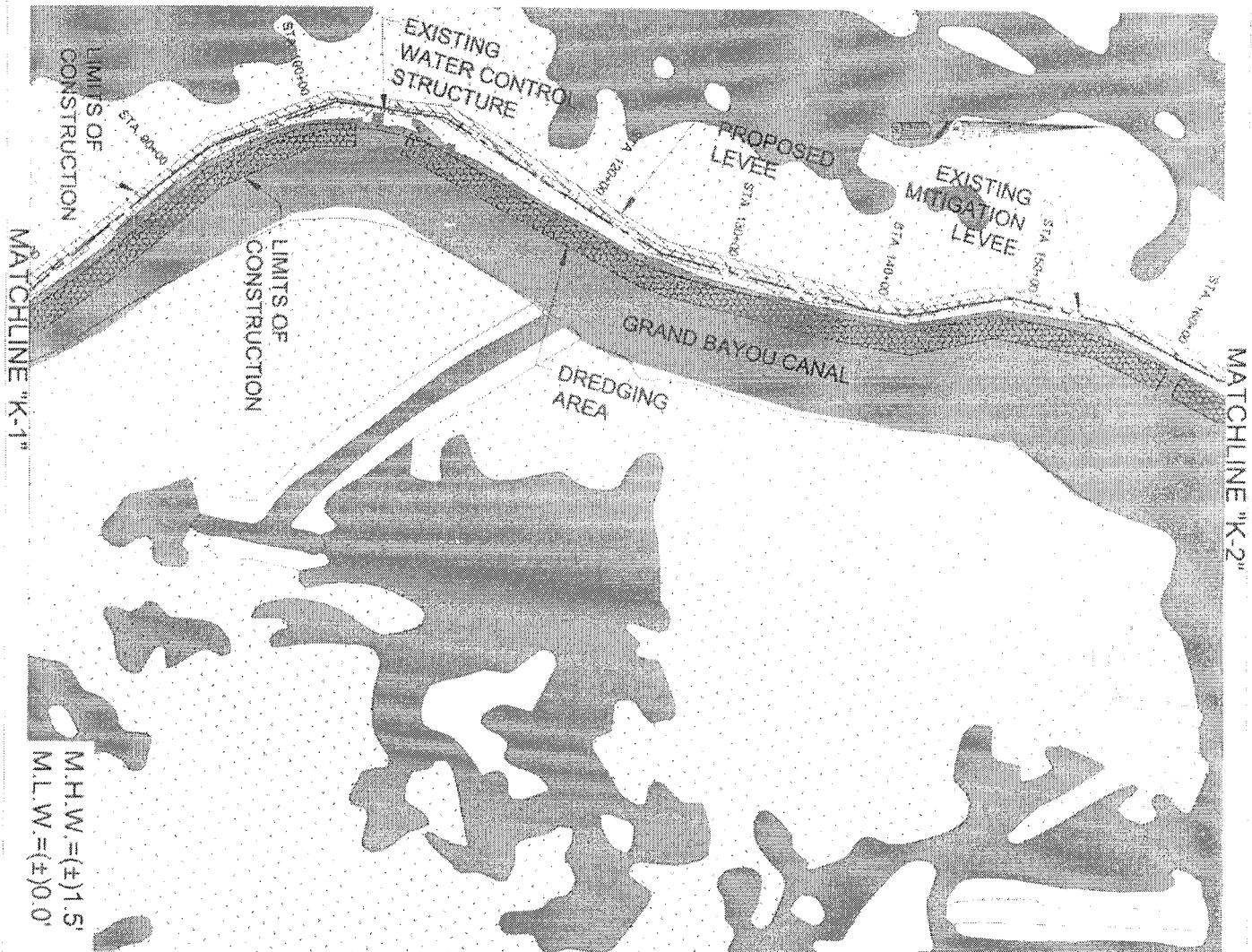
SCALE: 1"=1000'

0 500' 1000'

**LEGEND:**

- EXIST. LEVEE LIMITS
- EXIST. PIPELINE
- EXIST. MARSHLAND
- PROPOSED LEVEE
- OPEN WATER
- BORROW AREA
- EXIST. LEVEE AREA

MORGANZA TO THE GULF REACHES "K" AND "L" - FIRST LIFT LAFOURCHE PARISH LOUISIANA PERMIT APPLICATION OVERALL PROJECT PLAN		DATE: 04-09-2013 SCALE: 1"=1000' SHEET NO: 041-001-01	DESIGNED BY: BOE CHECKED BY: BOE DRAWN BY: TPR	 ALL SOUTH CONSULTING ENGINEERS, L.L.C. 605 PAPERWORTH AVENUE METairie, LA 70002 (504) 885-2222 FICID PROJECT No. XXX-XXXX-XXX	DATE: _____ APPROVED: _____ REVIEWED: _____ APPROVED: _____
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**WETLAND IMPACTS:**

**-LEVEE CONSTRUCTION:**

TOTAL LEVEE AREA = (131.62 AC)  
EXIST. LEVEE AREA = (50.2 AC)

**TOTAL WETLAND IMPACTS = (68.6 AC)**

-MARSH AREA IMPACTED = (56.7 AC)  
-BRACKISH MARSH = (40.8 AC)  
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-OPEN WATER IMPACTED = (11.9 AC)

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TOTAL EXCAVATION AREA = (210 AC)  
-NON-WETLAND PASTURE AREA = (102 AC)  
-OPEN WATER DREDGING = (108 AC)

**ESTIMATED QUANTITIES:**

**OPEN**  
WATER DREDGING = (935,000 CY)  
**ON-SITE BORROW**  
EXCAVATION = (1,074,000 CY)  
**HAULED-IN**  
OFF-SITE BORROW = (30,000 CY)  
MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'



**LEGEND:**

- EXIST. LEVEE LIMITS
- EXIST. PIPELINE
- EXIST. MARSHLAND
- PROPOSED LEVEE
- OPEN WATER
- BORROW AREA
- EXIST. LEVEE AREA

MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
OVERALL PROJECT PLAN

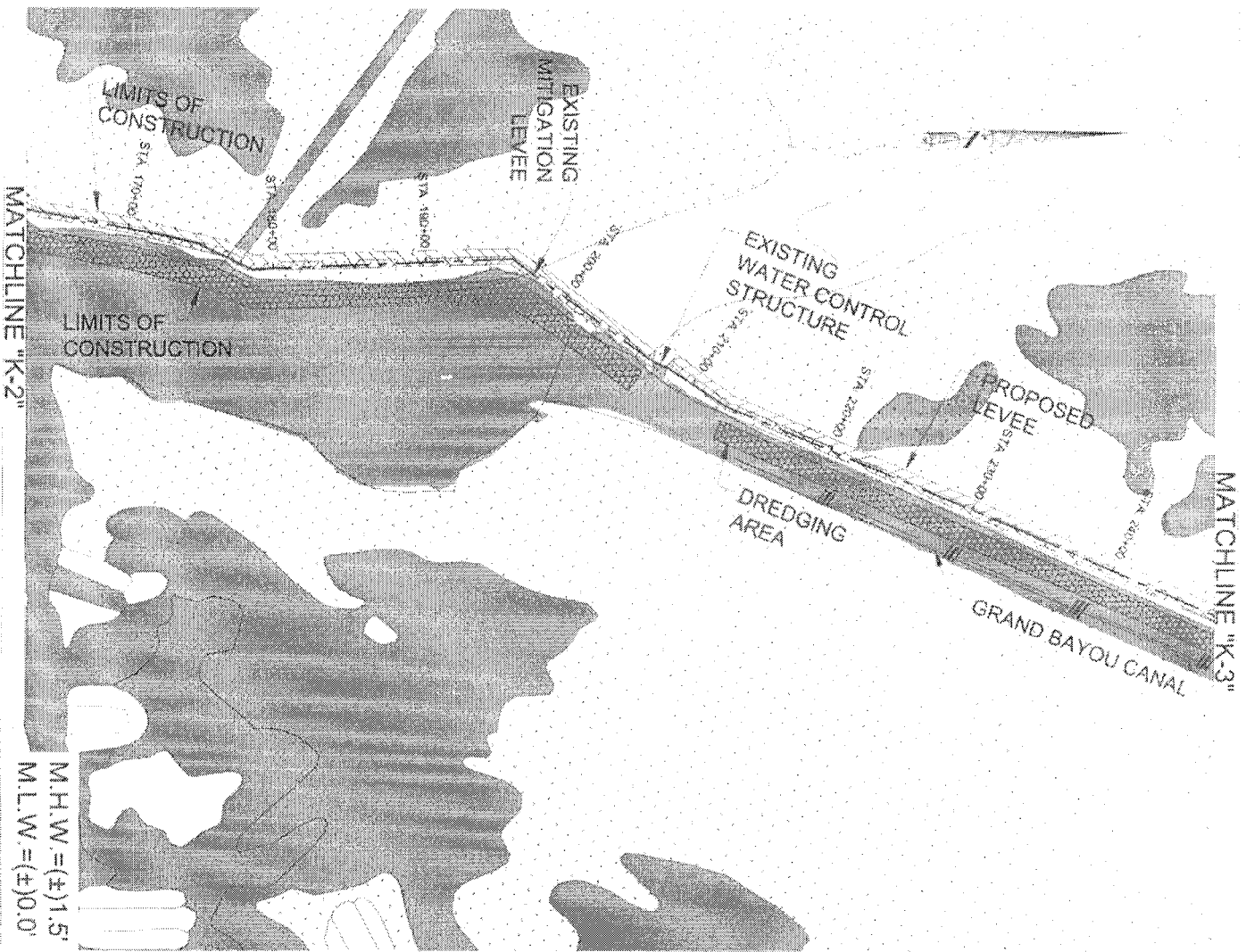
DATE: 04-08-2013  
SCALE: 1"=1000'  
JOB NO: 041-001-01

DESIGNED BY: BDE  
DRAWN BY: TFR  
CHECKED BY: BDE

**ALL SOUTH CONSULTING ENGINEERS, L.L.C.**  
882 DARTMOUTH AVENUE  
METairie, LA 70008  
8504-302-2763

ABCE PROJECT NO: XXX-XXX-XX

DATE	REVISIONS	BY	APP'D



MATCHLINE "K-3"

MATCHLINE "K-2"

M.H.W. = (+) 1.5'  
M.L.W. = (+) 0.0'

**WETLAND IMPACTS:**

**-LEVEE CONSTRUCTION:**

TOTAL LEVEE AREA = (131.62 AC)  
EXIST. LEVEE AREA = (50.2 AC)

**TOTAL WETLAND IMPACTS = (68.6 AC)**

-MARSH AREA IMPACTED = (56.7 AC)  
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-OPEN WATER IMPACTED = (11.9 AC)

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PASTURE AREA = (102 AC)  
-OPEN WATER DREDGING = (108 AC)

**ESTIMATED QUANTITIES:**

OPEN  
WATER DREDGING = (935,000 CY)  
ON-SITE BORROW  
EXCAVATION = (1,074,000 CY)

HAULED-IN  
OFF-SITE BORROW = (30,000 CY)  
MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'

**LEGEND:**

- EXIST. LEVEE LIMITS
- EXIST. PIPELINE
- EXIST. MARSHLAND
- PROPOSED LEVEE
- OPEN WATER
- BORROW AREA
- EXIST. LEVEE AREA

MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
OVERALL PROJECT PLAN

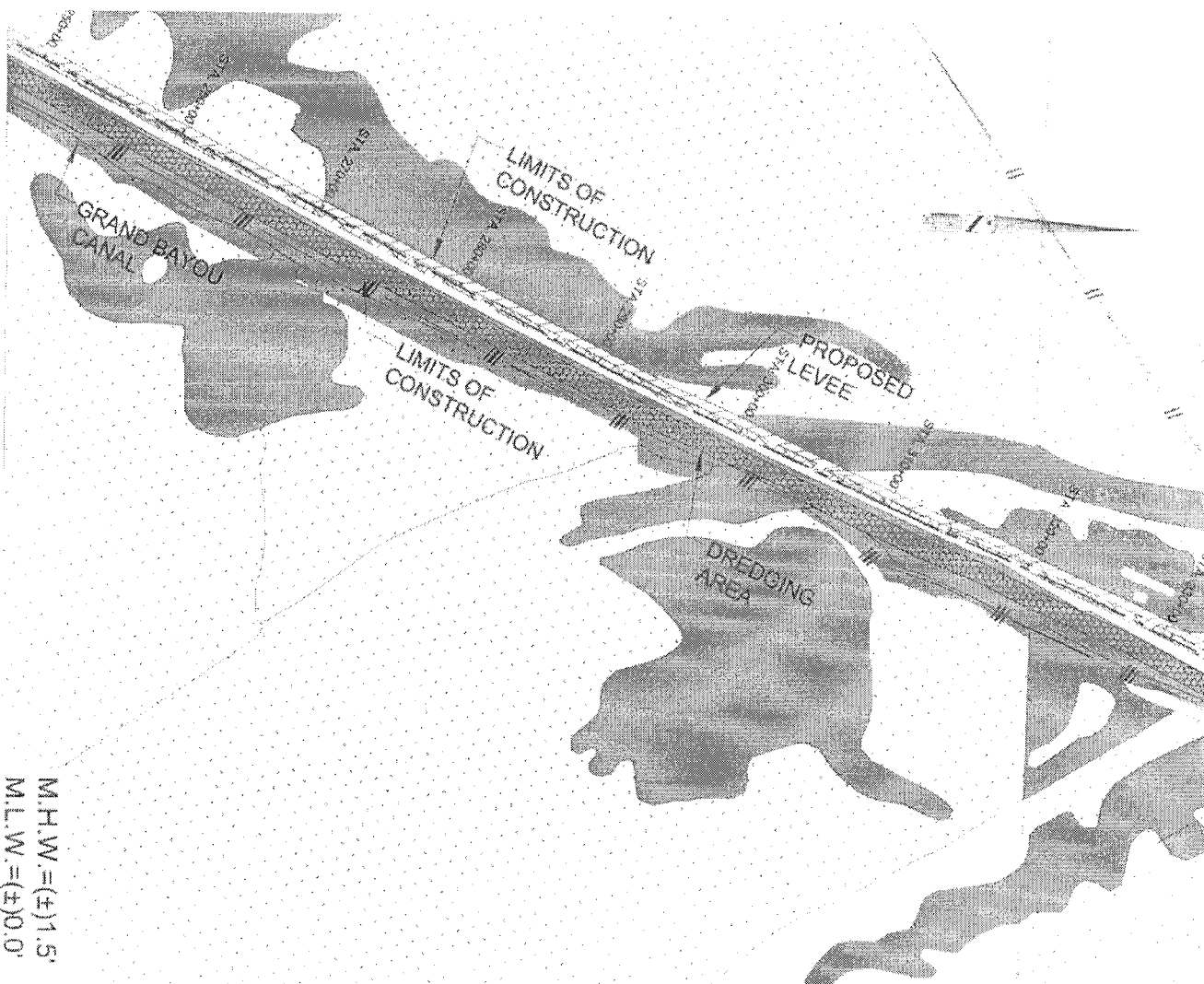
DATE	04-08-2013	DESIGNED BY	BDE
SCALE	1"=1000'	DRAWN BY	TFR
JOB NO.	041-001-01	CHECKED BY	BDE

**AS** ALL SOUTH CONSULTING ENGINEERS, L.L.C.  
645 PAPERWORTH AVENUE  
METairie, LA 70002  
(504) 833-2781  
ASCE PROJECT NO. 0000-0000-000

DATE	REVISION	BY	APP'D
4	15		

MATCHLINE "K-4"

MATCHLINE "K-3"



**WETLAND IMPACTS:**

**-LEVEE CONSTRUCTION:**

TOTAL LEVEE AREA = (131.62 AC)  
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-OPEN WATER IMPACTED = (11.9 AC)

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TOTAL EXCAVATION AREA = (210 AC)

-NON-WETLAND PASTURE AREA = (102 AC)

-OPEN WATER DREDGING = (108 AC)

**ESTIMATED QUANTITIES:**

OPEN WATER DREDGING = (935,000 CY)

ON-SITE BORROW EXCAVATION = (1,074,000 CY)

HAULED-IN OFF-SITE BORROW = (30,000 CY)

MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'



**LEGEND:**

- EXIST. LEVEE LIMITS
- EXIST. PIPELINE
- EXIST. MARSHLAND
- PROPOSED LEVEE
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- BORROW AREA
- EXIST. LEVEE AREA

MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
OVERALL PROJECT PLAN

DATE: 04-08-2013  
SCALE: 1"=1000'  
JOB NO: 04-1-081-01

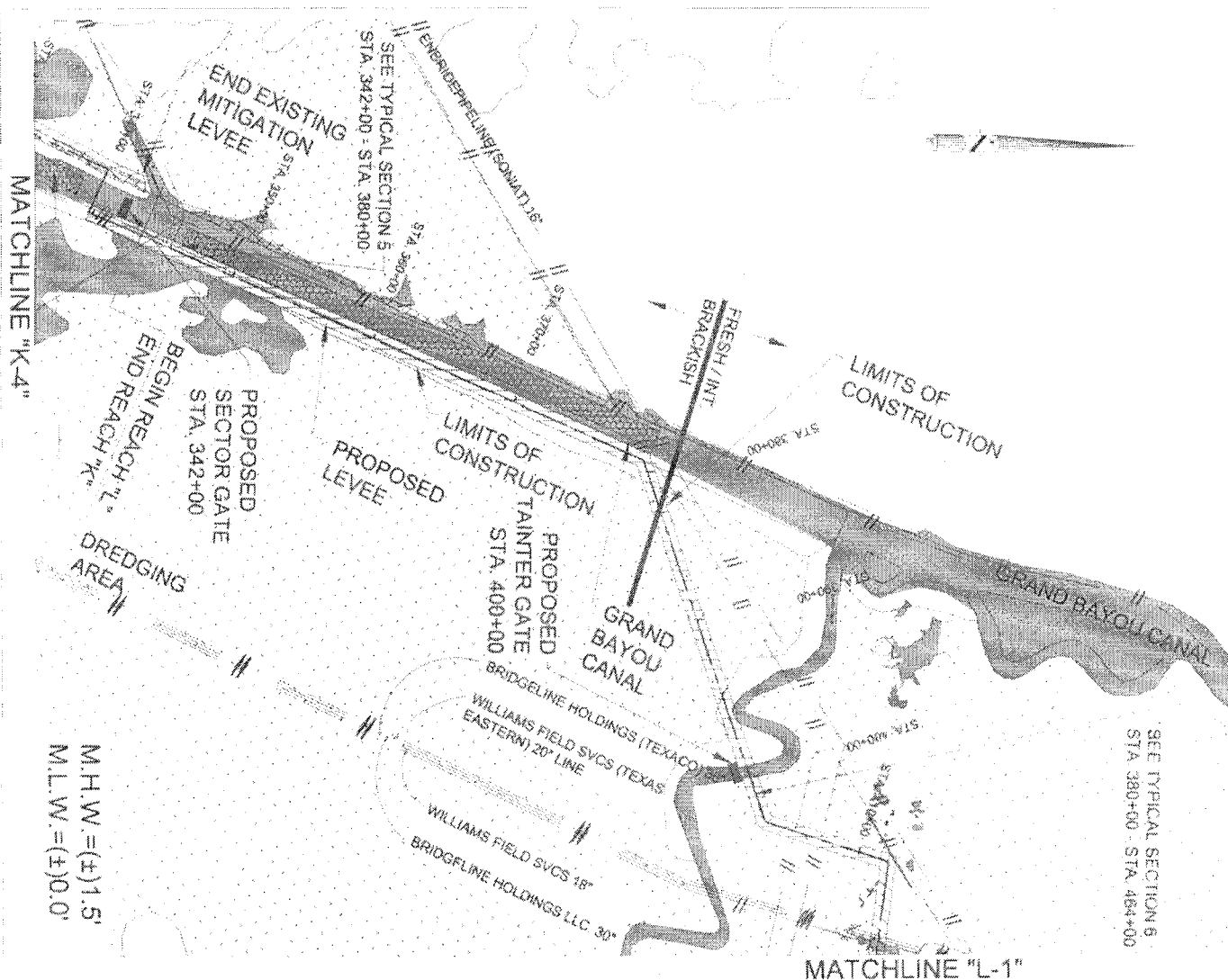
DESIGNED BY: BDE  
DRAWN BY: TFR  
CHECKED BY: BDE

**ALL SOUTH CONSULTING ENGINEERS, L.L.C.**  
602 PAPERBURY AVENUE  
METairie, LA 70002  
(504) 885-2763  
ARC PROJECT NO: 300X-KXX-XX

DATE	REVISION	BY

5 \* 15



SEE TYPICAL SECTION 6  
STA 380+00 - STA 464+00

MATCHLINE "L-1"

## WETLAND IMPACTS

## LEVEE CONSTRUCTION

TOTAL LEVEE AREA = (131.62 AC)  
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# EXCAVATION AND DREDGING:

TOTAL EXCAVATION AREA = (210 AC)  
-NON-WETLAND  
PASTURE AREA = (102 AC)  
-OPEN WATER DREDGING = (108 AC)








## ESTIMATED QUANTITIES:

OPEN  
WATER DREDGING = (935,000 CY)  
ON-SITE BORROW  
EXCAVATION = (1,074,000 CY)  
HAULED-IN  
OFF-SITE BORROW = (30,000 CY)  
MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'



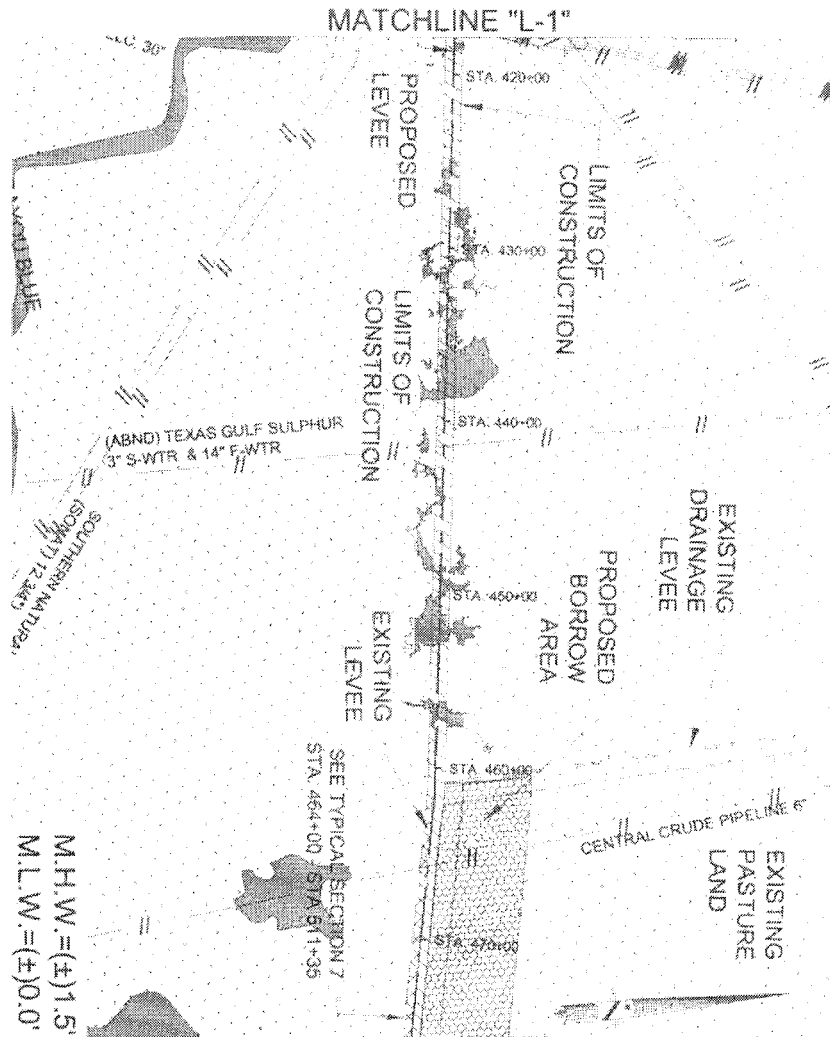
### LEGEND:

- |   |                     |
|---|---------------------|
|  | EXIST. LEVEE LIMITS |
|  | EXIST. PIPELINE     |
|  | EXIST. MARSHLAND    |
|  | PROPOSED LEVEE      |
|  | OPEN WATER          |
|  | BORROW AREA         |
|  | EXIST. LEVEE AREA   |

姓名	王	性别	男
出生日期	1980年1月1日	身份证号	36010119800101XXXX
职业	教师	工作单位	XX中学
住址	XX省XX市XX区XX路XX号		
联系电话	138XXXXXXXX		
电子邮箱	WANG@EXAMPLE.COM		
备注			

**AS** ALL SOUTH  
CONSULTING  
ENGINEERS, L.L.C.  
862 FARMWORTH AVENUE  
METairie, LA 70002  
(504) 885-2769





# WETLAND IMPACTS:

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-NON-WETLAND

PASTURE AREA = (102 AC)

-OPEN WATER DREDGING = (108 AC)

## ESTIMATED QUANTITIES:

### OPEN

WATER DREDGING = (935,000 CY)

### ON-SITE BORROW

EXCAVATION = (1,074,000 CY)

### HAULED-IN

OFF-SITE BORROW = (30,000 CY)

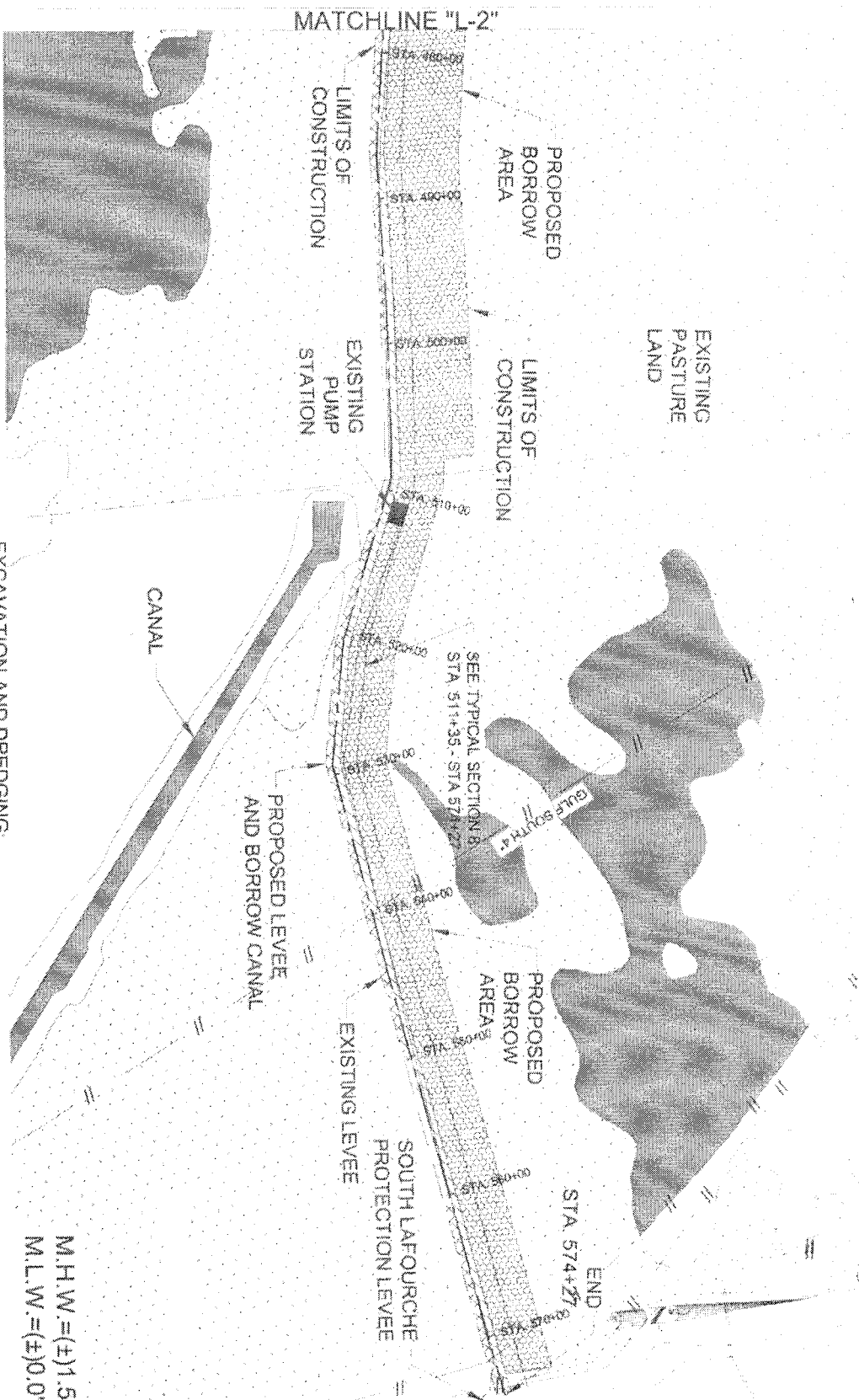
MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'

## LEGEND:

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- EXIST. PIPELINE
- EXIST. MARSHLAND
- PROPOSED LEVEE
- OPEN WATER
- BORROW AREA
- EXIST. LEVEE AREA

<p>7 15</p>	<p>MORGANZA TO THE GULF REACHES "K" AND "L" - FIRST LIFT LAFOURCHE PARISH, LOUISIANA PERMIT APPLICATION OVERALL PROJECT PLAN</p>	<p>DATE 04-06-2013 SCALE 1"=1000' JOB NO. 041-001-01</p>	<p>DESIGNED BY BDE DRAWN BY TFR CHECKED BY BDE</p>	<p>ALL SOUTH CONSULTING ENGINEERS, L.L.C. 6812 PAMPYRTH AVENUE METairie, LA 70002 (504) 885-2700 FAX (504) 885-2701 WWW.ASCE-LLC.COM</p>	<p>DATE REVISION</p>	<p>REVISION</p>	<p>DATE</p>
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TOTAL WETLAND IMPACTS = (68.6 AC)

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-OPEN WATER IMPACTED = (11.9 AC)

## -EXCAVATION AND DREDGING:

TOTAL EXCAVATION AREA = (1210 AC)

-NON-WETLAND PASTURE AREA = (102 AC)

-OPEN WATER DREDGING = (108 AC)

## ESTIMATED QUANTITIES:

OPEN WATER

DREDGING = (935,000 CY)

ON-SITE BORROW

EXCAVATION = (1,074,000 CY)

HAULED-IN

OFF-SITE BORROW = (30,000 CY)

MAXIMUM VESSEL DRAFT = 5.0'

SCALE: 1"=1000'

0 500' 1000'

## LEGEND:

	EXIST. LEVEE LIMITS
	EXIST. PIPELINE
	EXIST. MARSHLAND
	PROPOSED LEVEE
	OPEN WATER
	BORROW AREA
	EXIST. LEVEE AREA

M.H.W. = (+1)1.5'  
M.L.W. = (+2)0.0'

MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
OVERALL PROJECT PLAN

DATE: 04-08-2013  
SCALE: 1"=1000'  
JOB NO: 041-001-01

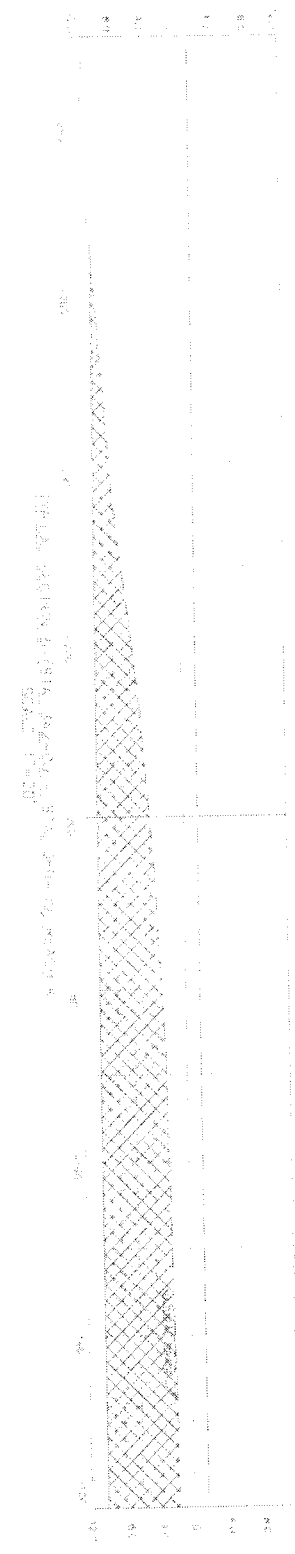
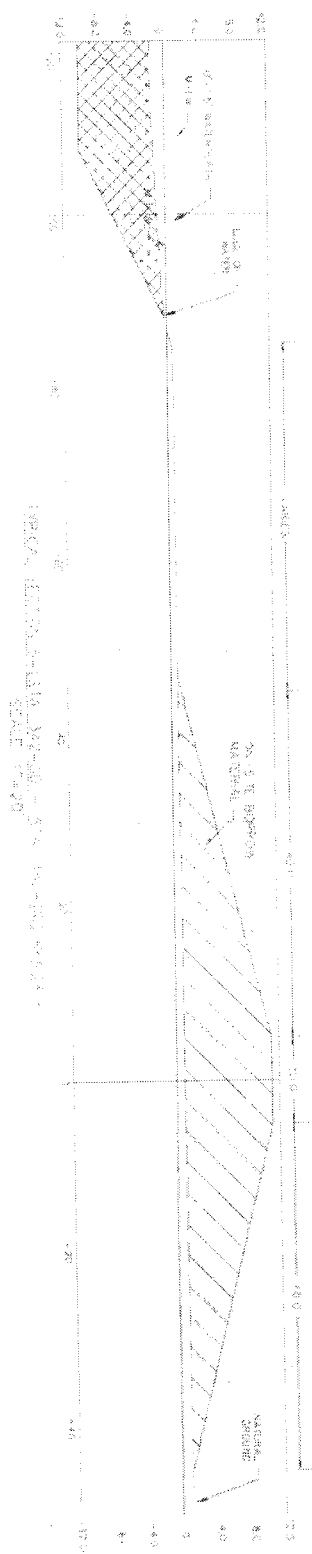
DESIGNED BY: BDE  
DRAWN BY: TFR  
CHECKED BY: BDE

ALL SOUTH CONSULTING ENGINEERS, L.L.C.  
652 PAMPONOT AVENUE  
METairie, LA 70002  
504-882-2800  
ASCE PROJECT NO. XXX-XXX-XX



**AS** **ALL SOUTH CONSULTING ENGINEERS, L.L.C.**  
652 PARKWORTH AVENUE  
ARIZONA, LA VIKINGS  
(504) 322-2755

[illegible][illegible]



MORGANZA TO THE GULF  
REACHES "K" AND "L" - FIRST LIFT  
LAFOURCHE PARISH, LOUISIANA  
PERMIT APPLICATION  
TYPICAL SECTIONS

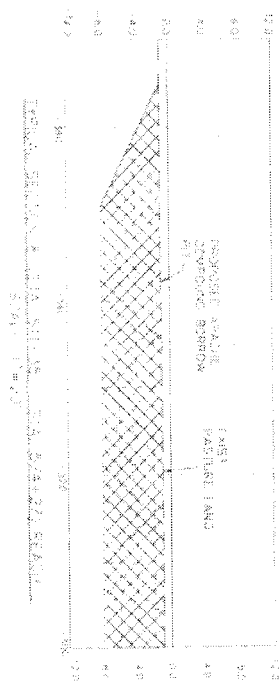
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DESIGNED BY: BDE  
DRAWN BY: TFR  
CHECKED BY: BDE  
SCALE: 1" = 20'

ALL SOUTH  
CONSULTING  
ENGINEERS, L.L.C.  
602 PAMPANOTH AVENUE  
METairie, LA 70001  
504-885-2742

NO.	REMARKS	DATE

11 15





MEAN HIGH WATER (MHW) 6.01  
 MEAN LOW WATER (MLW) 2.00  
 SEASIDE BAYVIEW, INC. (MHW)  
 1000 PINE STREET, SUITE 100  
 NEW ORLEANS, LA 70112

**MORGANZA TO THE GULF  
 REACHES "K" AND "L" - FIRST LIFT  
 LAFOURCHE PARISH, LOUISIANA  
 PERMIT APPLICATION  
 TYPICAL SECTIONS**

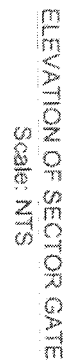
DATE: 04-06-2013  
 SCALE: 1" = 20'  
 JOB NO: 041-001-01

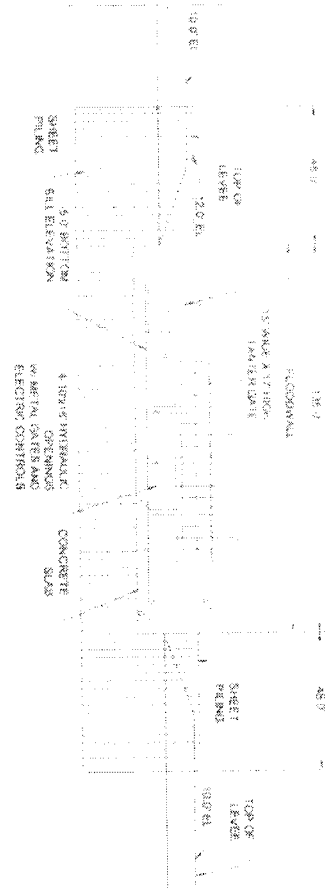
DESIGNED BY: BDE  
 DRAWN BY: TFR  
 CHECKED BY: BDE

**ALL SOUTH CONSULTING ENGINEERS, L.L.C.**  
 252 PINEGROVE AVENUE  
 METairie, LA 70006  
 504-882-2700  
 504-882-2701

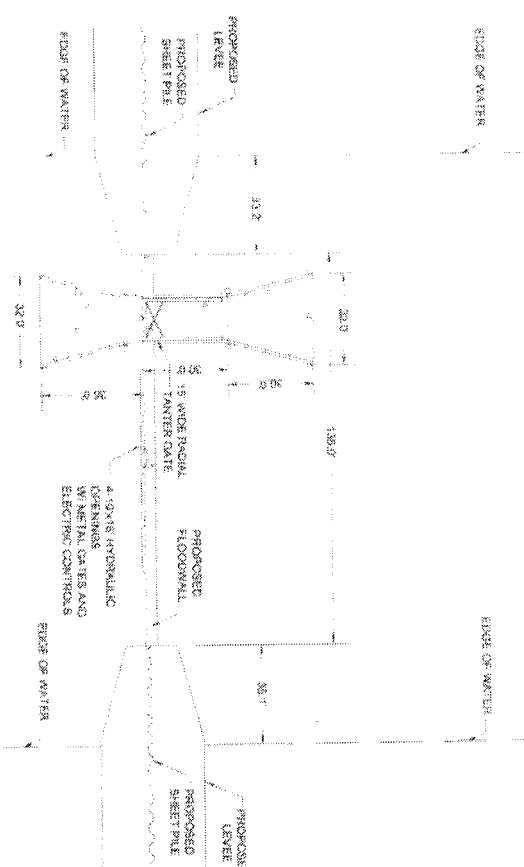
DATE	REVISION	APPROVED







ELEVATION OF BAYOU L' BLEU  
TANTER GATE  
Scale: NTS



PLAN VIEW - BAYOU L' BLEU  
TANTER GATE  
Scale: NTS

MORGANZA TO THE GULF REACHES "K" AND "L" - FIRST LIFT LAFOURCHE PARISH, LOUISIANA PERMIT APPLICATION FLOODGATE DETAILS		DATE: 04-18-2013 PLACE: V JOB NO: 041-001-01	DESIGNED BY: BDE DRAWN BY: TFR CHECKED BY: BDE	 <b>ALL SOUTH CONSULTING ENGINEERS, L.L.C.</b> 2822 PALM WORTH AVENUE METairie, LA 70006 (504) 885-9787 AISC PROJECT NO: XXX-XXX-XX	DATE: 04-18-2013 REVISION: 1 BY: BDE DESCRIPTION:
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15 - 15

# Mitigation Plan

To offset the unavoidable Impacts of

**Proposed Levee and Floodgate  
Lafourche Parish, Louisiana  
MVN-2011-1611-WJJ/P20110563  
South Lafourche Levee District**



Prepared By



**ALL SOUTH  
CONSULTING  
ENGINEERS, L.L.C.**

May 20, 2013

## I INTRODUCTION

The following document summarizes the mitigation plan for the permit number MVN-2011-1611-WJJ/P20110563 by the South Lafourche Levee District. This permit application is for the construction of a flood control levee and related works in Lafourche Parish, Louisiana. After considering alternatives and avoiding unnecessary impacts, the activity proposed in that application causes approximately 56.7 acres of impacts to emergent brackish and fresh marsh, and 12.0 acres of open water. Approximately 30.9 acres of the emergent marsh impacts, and 10.2 of open water, are within the Grand Bayou Unit of the Point Aux Chenes Wildlife Management Area. Approximately 25.8 acres of the emergent marsh impacts are outside of the WMA, along with the 1.8 acres of open water.

This mitigation plan is meant to provide mitigation for all of those unavoidable impacts. This mitigation plan consists of two components, terraces and marsh creation. The terraces will be constructed within the Grand Bayou Unit, and are meant to mitigate for the impacts to the emergent marsh within that unit (Sheet 3 Attached). The mitigation plan includes approximately 41 acres of terraces. These terraces will be constructed to an elevation of +3, and are anticipated to settle to an elevation of 2.0' NGVD, with 4:1 slopes to the natural bottom elevation.

The mitigation plan also includes approximately 40.5 acres of marsh creation as mitigation for the unavoidable impacts to the marsh outside of the Grand Bayou Unit. This marsh creation will be in open water areas immediately adjacent to the existing South Lafourche Levee District Levee, and an existing private levee in the area (Sheet 5). In addition to providing the necessary mitigation for the current project, this location should provide secondary benefits to the existing levee system in the area.

This plan was developed so that regulatory and resource agencies can review and provide comments. If the agencies approve the plan, permitting and design activities will be implemented in an effort to construct the mitigation project.

		Marsh Type			Total
		Brackish	Fresh/Intermediate	Open Water	
Inside Existing Mitigation Area		30.90	0.00	10.20	41.10
Outside Existing Mitigation Area		9.90	15.90	1.80	27.60
Total		40.80	15.90	12.00	68.70

## 2.0 OBJECTIVES

### 2.1 PROPOSED ACTION

There are two proposed actions in the mitigation plan: 1) to construct approximately 40.5 acres of marsh within the vicinity the west side of the Larose to Golden Meadow Hurricane Protection Project, in the vicinity of Cut Off, Louisiana, and 2) to construct approximately 41 acres of terraces in the Grand Bayou Unit of the Point Aux Chenes Wildlife Management Area. The marsh creation will include borrowing native material from the existing oilfield access canals close the project site. This material will be placed in existing, shallow open water areas of broken fresh marsh.

The terraces will be constructed using native material side cast by a marsh buggy excavator. These terraces will be constructed to an elevation and using a template that will provide the maximum amount of habitat benefit for the area.

This mitigation will be constructed as the impacts occur. The State of Louisiana in partnership with the Lafourche Parish Government is currently planning the improvements along the existing Grand Bayou Unit levee. These improvements will cause the unavoidable impacts inside the Grand Bayou unit, approximately 30.9 acres of emergent marsh, and 10.2 of open water, as described above. The proposed mitigation will be provided within the time period described in the following sections for those impacts.

The remaining impacts to emergent wetlands and open water will occur within the next 3 years. The mitigation for those impacts will occur within the time period described in the sections below.

It is expected that the actual impacts may differ slightly from those projected in this plan as additional soils and other data are produced. These impacts and subsequent mitigation will be refined as these projects mature in that process. If such conditions necessitate a change in the mitigation plan, the SLLD will modify this plan as necessary, and submit a revised plan to the respective agencies.

## **2.2 MITIGATION OBJECTIVES**

The marsh creation feature will be located immediately adjacent to the existing South Lafourche Levee System, and an existing private levee. This location is also adjacent to the proposed flood control improvements that are the basis of the permit application. The objective of this aspect of the mitigation proposal is to create a marsh system complex that will result in a diversity of emergent marsh, shallow water habitat, and marsh edge. This constructed wetland area should provide stable substrate for the growth and development of native vegetation and be functional for wildlife and fisheries resources. It should have long-term sustainability with low maintenance costs. The marsh complex should be located in a protected area with reduced wave fetch for resiliency and longevity. Additionally, the system should have access for estuarine dependent species. Where practicable, the system should create additional benefits, such as restoring salinity regimes, protecting the other flood control infrastructure in the vicinity, and restoring hydrology. Engineering and environmental criteria including impacts, cost, constructability, and maintenance were considered to develop the proposed mitigation plan.

The terrace aspect of this mitigation will be located in the Grand Bayou Unit of the Point Aux Chenes Wildlife Management Area. This location is in the basin where the permit impacts occur. The objective of this aspect of the plan is also to create a system that will provide edge and shallow water habitat in an existing open water area. The terraces should reduce turbidity in



the area, encourage deposition of suspended sediments, preserve the Point Aux Chenes ridge to the west, and increase fisheries production by increasing the length of marsh edge.

### **3.0 SITE SELECTION**

The proposed mitigation project is consistent with the State's Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast. The vicinity, constructability, landowner considerations, avoidance of future hurricane protection project sites, interaction with existing flood control features in the area, and long term protection were factored into the selection process. A review was conducted using aerial photographs to identify areas of degraded wetlands that would qualify as good candidates for mitigation within the project area. Given certain practical considerations, i.e. not too deep, accessible for construction, no oyster leases, these areas would make good candidates for marsh creation and terracing projects. The selected site provides many ecological advantages including protecting ridge function, accessibility to the public (in the WMA), and no need for containment for marsh creation. Over time salinity intrusion, subsidence, and hurricanes led to the loss and breaking of interior marsh platform in the mitigation area. A mitigation plan in this proposed region will bring additional benefits to other areas in the project vicinity. The area of degraded marsh identified in our review has been found to be a good candidate for mitigation.

### **4.0 MITIGATION PLAN**

#### **MARSH CREATION**

The marsh creation aspect of the proposed mitigation plan includes hydraulic dredging approximately 400,000 cubic yards from several unnamed oilfield canals in the area to fill the approximately 40.5 acre marsh creation area. However, this quantity may change based on the bid amounts when the project is publicly bid. The project will be funded by the South Lafourche Levee District.



The existing water depth of the marsh creation is assumed to be at an elevation of -1.00 feet for volume calculations since no survey work has been conducted for the project area. The target elevation of the fill material is +2.0 feet and the target settled elevation is +1.00 feet. Existing elevation features will be used as containment. Vegetation will be planted after the natural resource agencies determines the type of plant species required for establishing an intertidal fresh marsh community. Planting densities are estimated to be 1,000 plants per acre which totals 40,500 single plant plugs over approximately 40.5 acres.

A cross section of the placement area is shown on Sheet 8 of the attached set. The project will create approximately 40.5 acres of intertidal marsh.

#### Specifications and Work Descriptions:

- Geographic Boundary of Enhancement Project – Refer to Sheet 2: Vicinity Map.
- Construction Methods – The marsh creation will be constructed using a hydraulic dredge to move the material from the borrow area to the placement area. The discharge pipe will be moved via small marsh buggy excavator.
- Timing and Sequence of Project and Mitigation Project Activities – Detailed design of the marsh creation aspect of the mitigation plan is expected to take about 6 months, with bidding shortly after. Construction is expected to take 12 – 18 months. Achievement of mitigation performance criteria is expected to occur as described in the Mitigation Plan.
- Source of Water Including Connections to Existing Waters – The water source for the marsh creation aspect of the mitigation project is tidal exchange with the several unnamed oilfield access canals in the area, and Bayou L'eau Bleau.
- Methods of Desired Plant Communities – The method for ensuring proper plant communities will be an adaptive management process. Two years post construction, South Lafourche Levee District will assess the quantity of natural vegetative colonization. Based on this assessment, SLLD will implement a planting regimen to ensure that the 3 year criterion of 80% colonization is achieved.
- Plans to Control Invasive Species – Invasive species control will be achieved through adaptive management including vegetative sampling during required monitoring



events. Establishment of a wetland surface elevation conducive to emergent herbaceous marsh species as opposed to woody species i.e. Chinese tallow, etc. will also serve as an invasive species control.

- Proposed Grading Plan Including Elevations & Slopes of Substrate – Existing: Flat, +/- (- 1') NAVD88 in open water areas, approximately +1.2' NAVD88 marsh elevation. The target construction elevation is expected to +2.0' NAVD88 (to be determined during detailed design) with a settled elevation of +1.0' NAVD88.
- Soil Management – Containment from in situ material from within marsh establishment area to be filled. Dewatering into existing marsh for nourishment and enhancement for additional ancillary benefits.
- Erosion Controls – N/A
- Stream Mitigation – N/A

### Terraces

The terracing aspect of the proposed mitigation plan includes borrow and placement of approximately 500,000 cubic yards of material to create approximately 41 acres of terraces. This quantity may change based on the bid amounts when the project is publicly bid. The project will be funded by the South Lafourche Levee District.

The existing water depth of the terracing site is assumed to be at an elevation of -2.00 feet for volume calculations since no survey work has been conducted for the project area. The target elevation of the fill material is +3.0 feet and the target settled elevation is +2.00 feet. Native vegetation will be planted after construction, most likely *Spartina Alterniflora*, based on review by the natural resource agencies.

A cross section of the placement area is shown on Sheet 7. The project will create approximately 41 acres of intertidal terrace habitat.

### Specifications and Work Descriptions:

- Geographic Boundary of Enhancement Project – Refer to Sheet 2: Vicinity Map.

- Construction Methods – The terraces will be constructed using a marsh buggy excavator to move the material from the borrow area to the placement area.
- Timing and Sequence of Project and Mitigation Project Activities – Detailed design of the terrace aspect of the mitigation plan is expected to take about 6 months, with bidding shortly after. Construction is expected to take 12 – 18 months. Achievement of mitigation performance criteria is expected to occur as described in the Mitigation Plan.
- Source of Water Including Connections to Existing Waters – The water source for the terrace aspect of the mitigation project is tidal exchange with Cut Off Canal, Grand Bayou, and Bayou Point Aux Chenes.
- Methods of Desired Plant Communities – The method for ensuring proper plant communities will be an adaptive management process. Native vegetation will be planted after construction, most likely *Spartina Alterniflora*, based on review by the natural resource agencies.
- Plans to Control Invasive Species – Invasive species control will be achieved through adaptive management including vegetative sampling during required monitoring events. Establishment of a wetland surface elevation conducive to emergent herbaceous marsh species as opposed to woody species i.e. Chinese tallow, etc. will also serve as an invasive species control.
- Erosion Controls – N/A
- Stream Mitigation – N/A

## 5.0 BASELINE INFORMATION

The marsh type in the terracing and marsh creation areas are classified as fresh to brackish marsh experiencing deterioration to open water in a majority of the areas. The wetland vegetation is consistent throughout the project area. The dominant plants in the area are oystergrass (*Spartina alterniflora*), marsh-hay cordgrass, and three square grass. The site is a marine tidally influenced, intertributary region of marsh. The site is characterized by shallow open water and remnant areas of degraded marsh. Past USDA aerial photos show similar open



water areas with the emergent wetlands degrading in coverage and regressing closer to the natural ridges to the extent of present conditions.

Open water comprises the majority of the proposed terracing and marsh creation site. According to the Web Soil Survey, the mapped soil types for this area include Cancienne silty clay loam, Rita muck, Allemands muck, Lafitee-Clovelly association, and Timbalier Bellpass association. All have 0% slope and are very poorly drained, and frequently flooded.

The area is and has been historically waters of the U.S. with adjoining jurisdictional wetlands.

#### **6.0 SITE PROTECTION INSTRUMENT (OWNERSHIP ARRANGEMENT)**

The South Lafourche Levee District is the official sponsor of this project. At the terrace site, this property is owned by the State of Louisiana, and is a Wildlife Management Area. The La. DWF has indicated support of this proposal, and will make the property available for this activity.

For the marsh creation area, a conservation servitude (20 year) will be used to ensure long term protection of all lands included in the mitigation project. The conservation servitude is binding to and runs with the title of the property. The servitude specifically prohibits certain activities (dumping, filling, etc.) that will reduce the quality of wetlands. The servitude will specify permissive activities such as hunting, fishing, recreational use, and mineral exploration provided that the activity may not negatively affect the functions and values of the restored intertidal wetlands. Any negative impacts to the area from permissive activities will require permitting and subsequent mitigation for adverse impacts.

#### **7.0 MAINTENANCE AND ADAPTIVE MANAGEMENT PLAN**

This conceptual mitigation plan lays the foundation for the adaptive management of the selected mitigation projects. In the event that the proposed mitigation plan does not adequately meet the success criteria that have been established by the natural resource agencies, SLLD will take appropriate action to improve the performance of the mitigation project in order to meet the required success criteria. The following provisions are generally accepted for contingency and

remedial actions and will be adopted, at the recommendation of the regulatory agencies, for this project:

1. Fill Material Elevations and Area

- a. Should the initial placement of dredged material not meet the 80% target construction elevation or aerial coverage, the Sponsor shall either deposit additional dredged material or redistribute existing material as necessary to achieve the target percentage and aerial coverage.
- b. At year 5, if less than 75% of the mitigation areas contain emergent vegetation, then the Sponsor may be required to deposit additional dredged material and plant these areas. Should it be decided that such measures are necessary, the location and extent of fill placement and vegetative plantings will be determined in consultation with, and with the approval of, the natural resource agencies.
- c. From years 6 through 20, if less than 50% of the mitigation areas contain emergent vegetation, then the Sponsor may be required to deposit additional dredged material and plant these areas so that the extent of marsh coverage is at minimum 50% at year 20. Should it be decided that such measures are necessary, the location and extent of fill placement and vegetative plantings will be determined in consultation with, and with the approval of, the natural resource agencies.

2. Vegetative Plantings

- a. If vegetative plantings survival is less than 50 percent per acre as determined by sampling or by observing high mortality at any location within the planted tract, the Sponsor shall take appropriate actions, as recommended by the natural resource agencies, to address the causes of mortality and shall replace all dead plantings during the following planting season. Replanting, monitoring, and reporting shall occur as needed to achieve and document the required one-year survival rate. If the survival criterion is not met after a second unsuccessful attempt, the Corps of Engineers will convene a meeting of the natural resource agencies and the Sponsor to decide if replanting should continue. Should the

natural resource agencies determine that achieving the required survival rate would not be likely; the Sponsor shall be required to provide replacement mitigation for the increment of value that did not accrue within the unsuccessful tracts within one year of this decision.

- b. Year 5 monitoring shall verify vegetation composition and survivorship goals established in Section 8. The Sponsor shall implement remedial action, as deemed necessary by the natural resource agencies, to ensure attainment of Year 5 survivorship and composition criteria.

### 3. Force Majeure

- a. Damages (identified below) caused by events beyond the control of the Sponsor and for which contractual agreements do not warrant restoration may be repaired using SLLD funds. Such damages include the following:
  - 1. Drought, insect damage, or infection damages to planted vegetation that occurs at a magnitude such that the vegetation fails to achieve the success criteria described in Section 8 and after each respective tract of planting has surpassed the contractor's one-year warranty (if a one-year warranty was required). Vegetative failure due to improper placement of fill material either too high or too low will not be considered Force Majeure.
  - 2. Damage resulting from fire, flood, hurricane, and other natural disasters.
  - 3. Erosion damages occurring after the site has been fully stabilized.

## **8.0 PERFORMANCE STANDARDS**

The goal of this mitigation plan is to meet the mitigation requirements of this permit. The evaluation criteria can be subdivided into initial, two year, and 5 year success criteria.

### 1. Initial Success Criteria

Initial placement of dredged material completed and at least 80% of site is within "as-built" or initial construction elevation range. Resource agencies will review the Sponsor's proposed initial construction elevation, but it will be the Sponsor's responsibility to select the initial construction elevation based on the desired post-compaction, "functional marsh" elevation identified by the natural resource agencies.

2. Year Two Success Criteria

- a. After at least one full year following construction, no less than 90% of the mitigation sites are within the "functional marsh" elevation range for each site.
- b. Planted material survivorship should not be less than 50% survival following one full growing season after planting.
- c. At least 80% vegetative cover as verified by monitoring reports and verified by an interagency team if necessary.

3. Year Five Success Criteria

- a. Five years after construction, at least 75% of the mitigation areas remain within the "functional marsh" target elevation range as determined by the natural resource agencies.
- b. Demonstrated use of the project area by estuarine-dependent marine fishery species (not just forage species) as shown by sampling on a quarterly basis during years four and five using cast nets and/or seines in open water within the project area.
- c. Observed use of created marsh by wildlife species typically found in natural marsh habitats of similar salinity regime.

These criteria will be used to evaluate the performance of the mitigation plan. Performance against these metrics will be reported in the annual mitigation reports.





## 9.0 MITIGATION PERFORMANCE MONITORING PLAN

The performance of the proposed mitigation project will be monitored by conducting site visits as well as spatial analysis to determine project performance in accordance with the established success criteria. The monitoring schedule will consist of pre and post construction surveys and annual evaluations on a one (1), three (3), five (5), ten (10), fifteen (15) and twenty (20) year interval. An "As Built" report as well as an annual monitoring report will be submitted to the regulatory stakeholders (USACE, USFW, NMFS, LDNR, LDWF, and EPA) in a format to be determined. The general monitoring provisions are as follows:

### 1. Monitoring Provisions

The Sponsor agrees to perform all necessary work to monitor the project to demonstrate compliance with the success criteria established in this mitigation plan. The monitoring program shall follow the guidelines established below:

- a. Visual Description. Visual descriptions shall be provided with each monitoring report by the following means:
  - i. One color aerial photograph (8" x 10" or larger) depicting the entire site. An aerial photograph should be taken once the site has been constructed, stabilized and planted (preferably in the 3rd or 5th year following completion of initial work).
- b. Hydrology.
  - i. Tidal influence shall be discussed using indicators of high and low tides.
- c. Vegetation.
  - i. The Sponsor shall establish linear survey plots at the time of planting, and shall conduct a survey of each planted tract at or near the end of the first growing season following planting of that tract. The Sponsor shall also perform a cursory examination of the entire planted tract to determine if overall survival is adequate.

2. The Sponsor shall provide a written report to the Corps of Engineers indicating the number and percentage of surviving plugs. In addition to plant material survivorship, the report shall describe the vegetative communities developing within and the overall condition of the entire project by determining:
    1. Dominant vegetation species
    2. A coverage assessment
    3. An invasive/noxious species assessment.
  3. The report shall describe the general condition of the plantings and discuss likely causes for any observed mortality within those tracts that did not exhibit a plant survival rate of at least 50 %.
- d. Site Elevation. The Sponsor shall provide a topographic survey with elevations shot along the transect lines established for determining plant survivorship. Surveys should be included in monitoring reports for years 1, 3, 5, 10, 15 and 20.
- e. Timing.
1. Monitoring shall be conducted during the growing season following years 1, 3, 5, 10, 15 and 20.
  2. Monitoring for the first year or any year following planting shall take place between September and November.

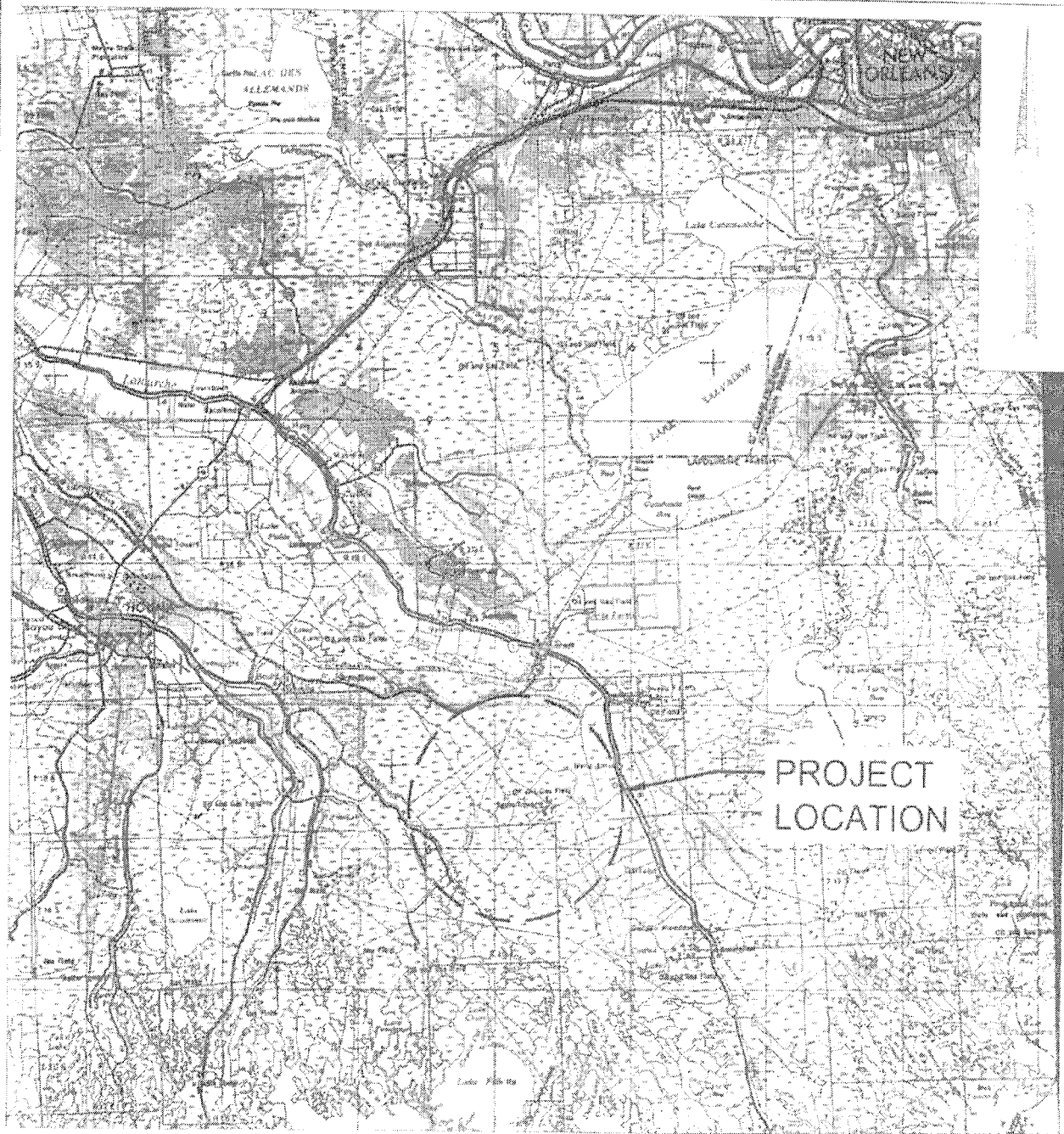
#### **10.0 EVALUATION OF BENEFITS**

The mitigation plan will create and revitalize a marsh system complex with a diversity of marsh habitat: marsh, marsh edge, and shallow water habitats. This plan would protect areas within the WMA, and along the existing and proposed flood protection alignment. The goals of the proposed mitigation plan are to: encourage the redevelopment of brackish marsh substrate and vegetation, create productive fish and wildlife habitat, reduce water level variability and

wave fetch, protect and restore ridge function and increase storm surge attenuation. Once the projects have been completed it will improve the habitat quality of the area; provide food, access, and cover for native wildlife, wading and migratory waterfowl, various commercial and recreational seafood species, as well as benthic flora and fauna.

#### 11.0 RECOMMENDATIONS

SLLD recommends that the regulatory agencies consider the proposed mitigation plan as an acceptable method mitigating for the unavoidable impacts of the proposed flood control measures. The proposed project not only mitigates for those impacts, but also provides other benefits. The proposed project restores eroded marsh in the area, provides habitat within a WMA which is open to the public, and benefits the existing and proposed flood control improvements in the area.



GOLDEN MEADOW, LA. GOLDEN MEADOW FARMS, LA.  
MINN RAYOU, LA., AND BAY COURANT, LA. QUAD MAPS

## LOCATION MAP



SCALE 1" = 1,000'

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
FOR THE SOUTH LAFOURCHE LEVEE DISTRICT,  
LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E,  
SECTIONS 13,14,15,22,27,28,33 T18S-R20E,  
SECTIONS 53,54 T18S-R21E

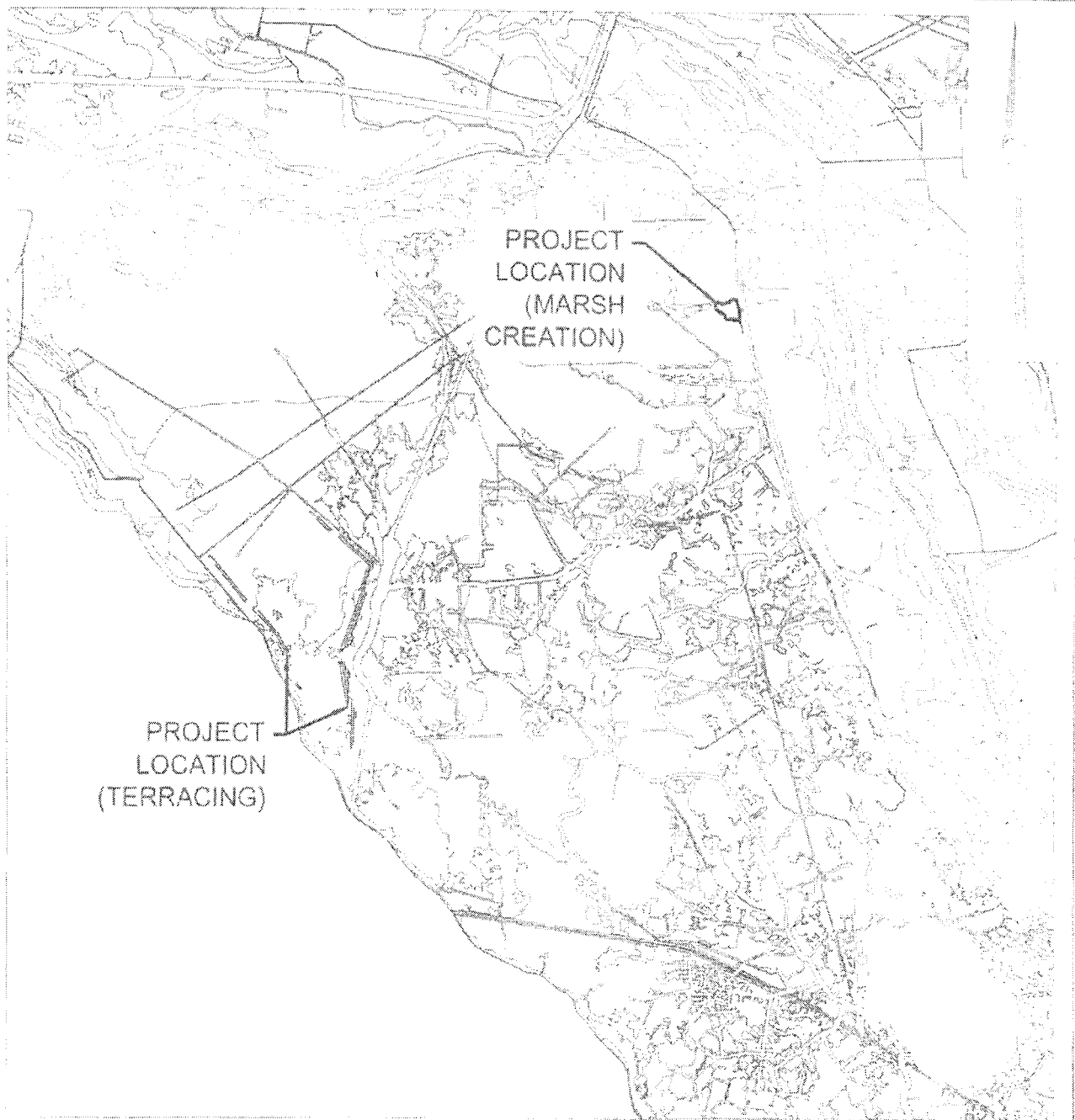


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DATE MAY 2013

SHEET 1 OF 8



GOLDEN MEADOW, LA, GOLDEN MEADOW FARMS, LA,  
MINK BAYOU, LA, AND BAY COURANT, LA. QUAD MAPS

### VICINITY MAP



SCALE: 1" = 1000'

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
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LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E;

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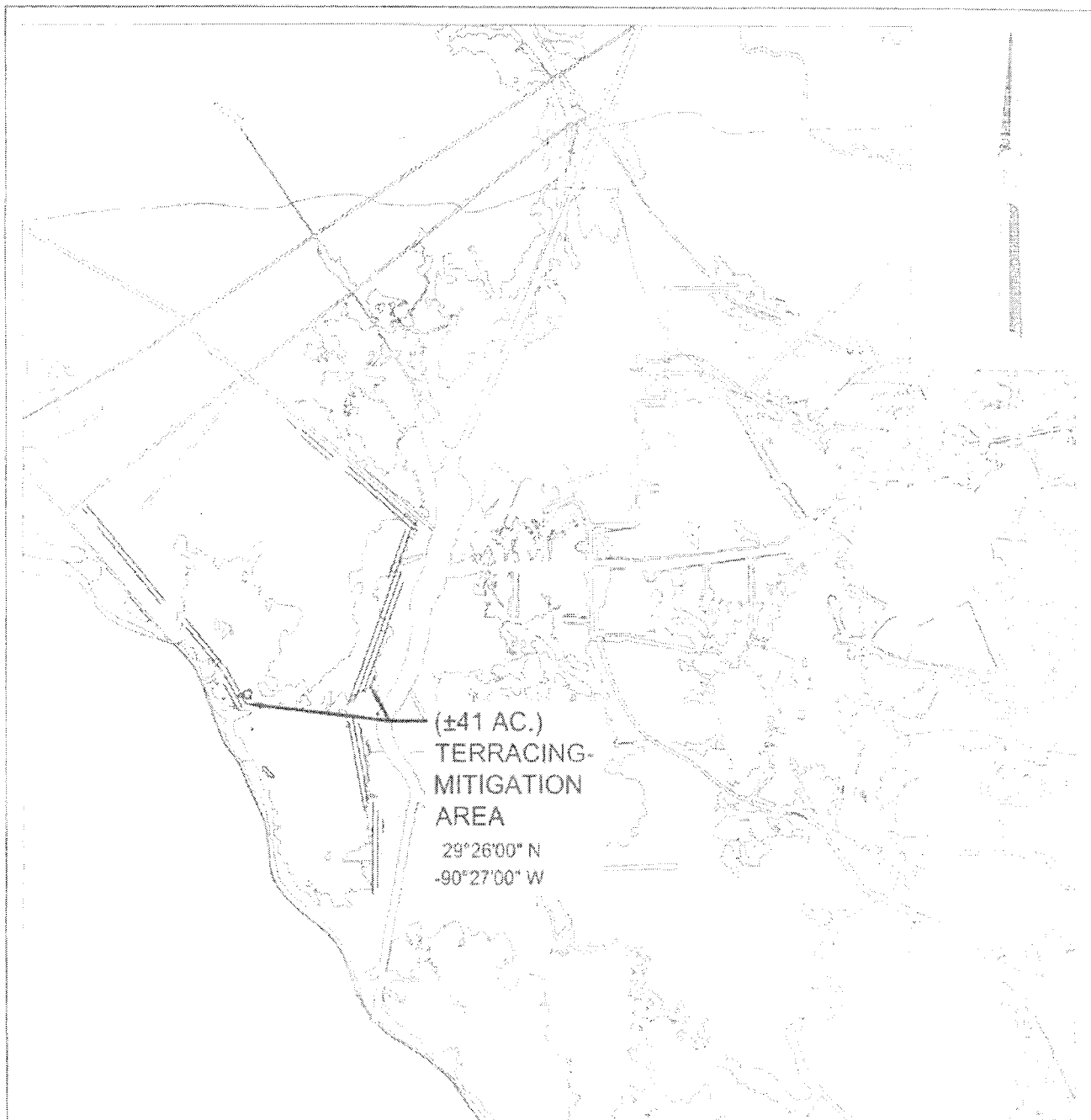


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DATE: MAY 2010

SHEET 2 OF 6



GOLDEN MEADOW, LA, GOLDEN MEADOW FARMS, LA,  
MINK BAYOU, LA, AND BAY COURANT, LA, QUAD MAPS

**PLAN VIEW:  
PROPOSED TERRACING  
- MITIGATION AREA**



MITIGATION PROJECT FOR THE CONSTRUCTION OF  
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LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E;

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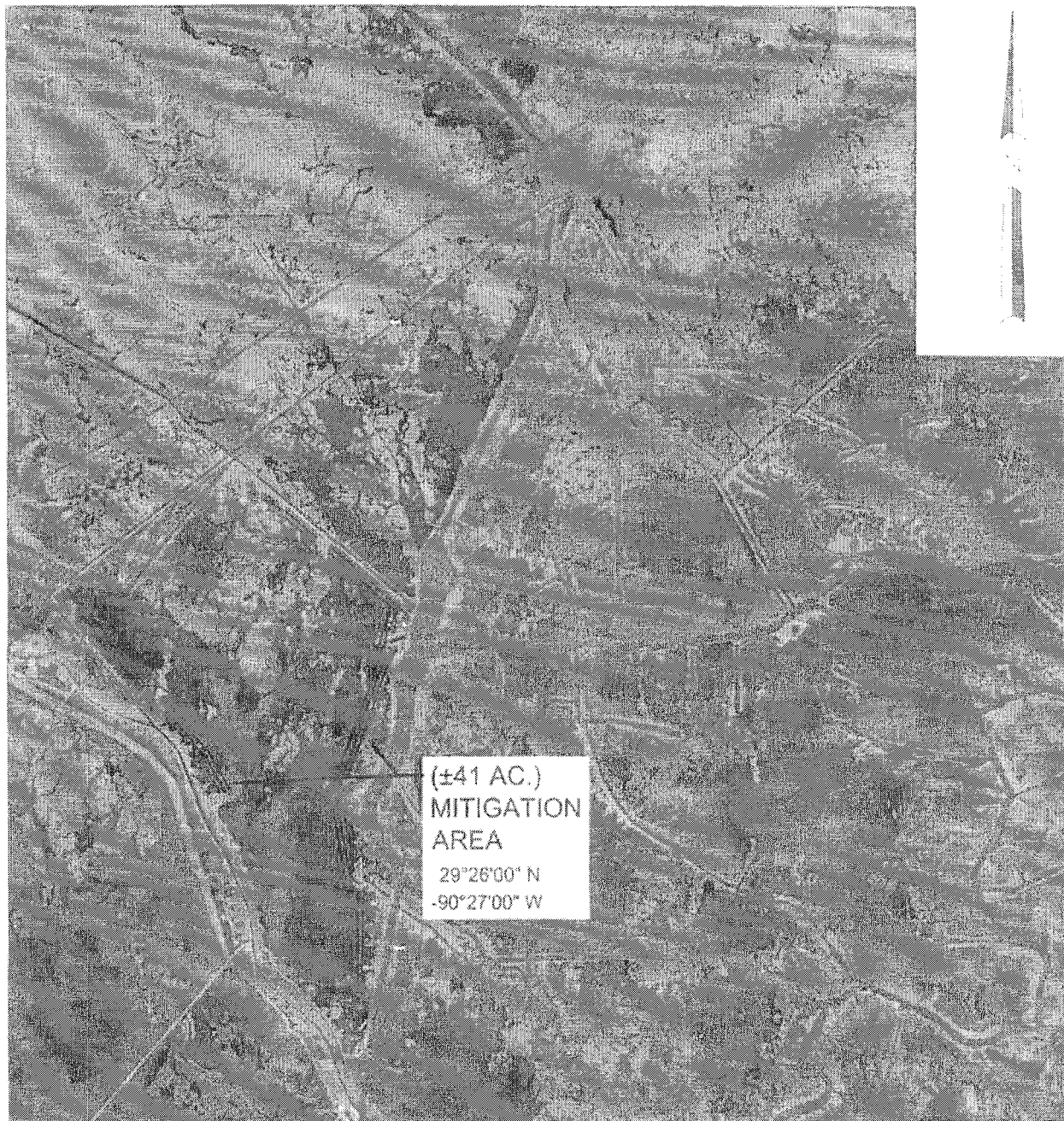


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DATE: MAY 2013

SHEET 3 OF 8



(±41 AC.)  
MITIGATION  
AREA

29°26'00" N  
-90°27'00" W

GOLDEN MEADOW, LA. GOLDEN MEADOW FARMS, LA.,  
MINK BAYOU, LA., AND BAY COURANT, LA. QUAD MAPS

**AERIAL VIEW:**  
**PROPOSED TERRACING**  
**- MITIGATION AREA**

0 5000' 10000'

SCALE: 1" = 5000'

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
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LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E;  
SECTIONS 13,14,15,22,27,28,33 T18S-R20E;  
SECTIONS 53,54 T18S-R21E



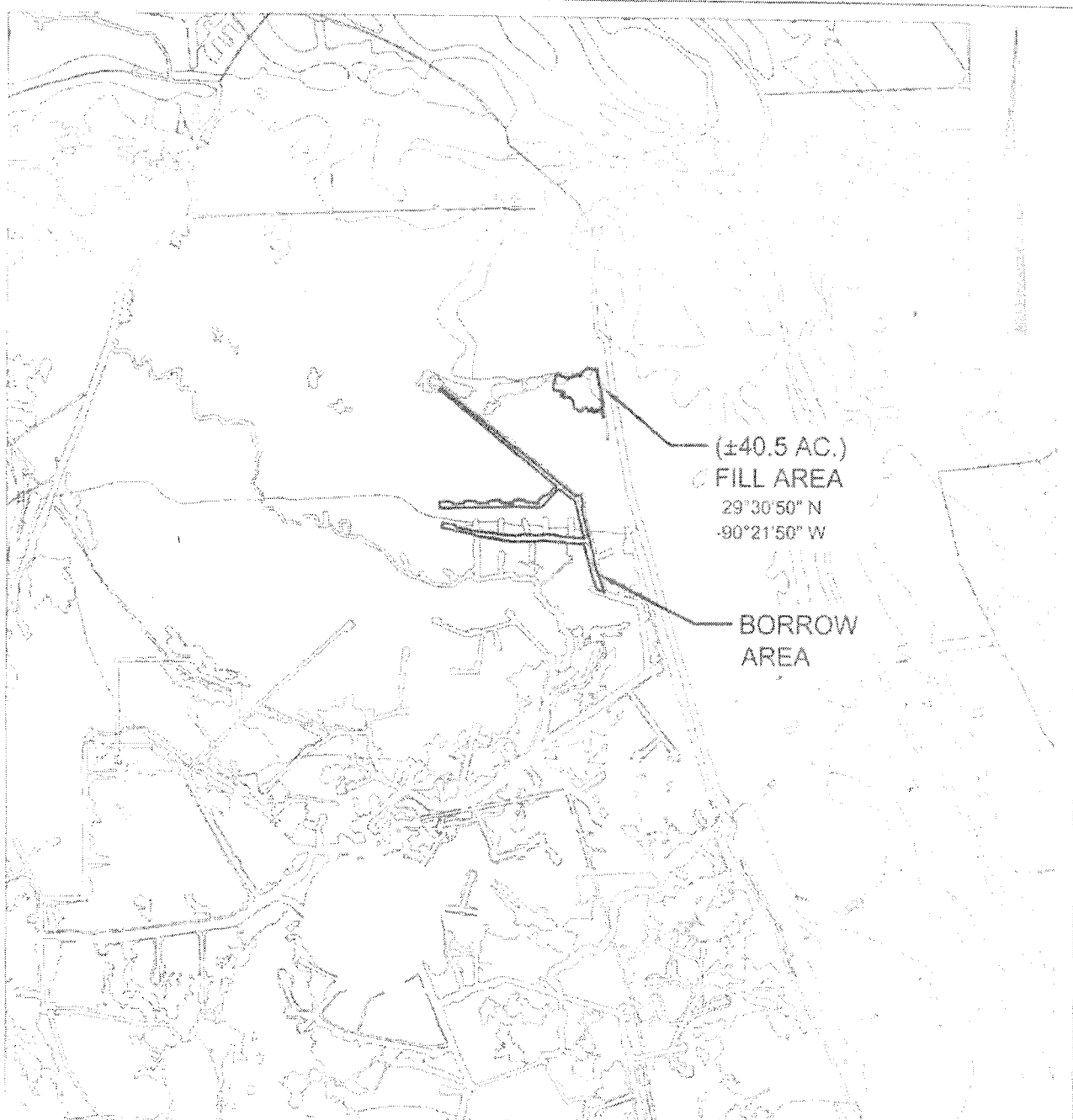
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DATE: MAY 2013

SHEET 4 OF 8





GOLDEN MEADOW, LA, GOLDEN MEADOW FARMS, LA,  
MINK BAYOU, LA, AND BAY COURANT, LA QUAD MAPS

**PLAN VIEW:**  
**PROPOSED MARSH CREATION**  
**- MITIGATION AREA**

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
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LOCATED WITHIN:

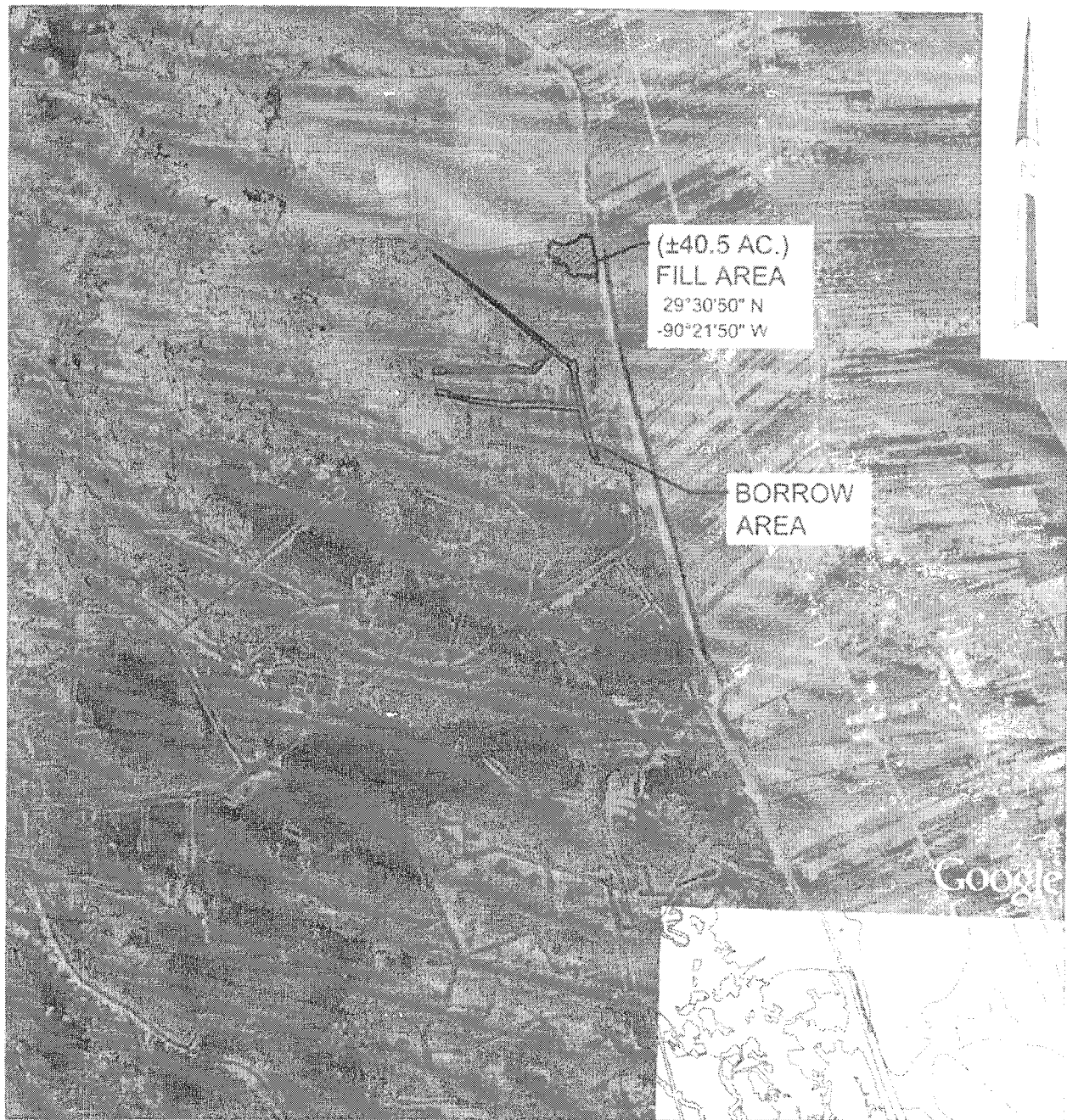
SECTIONS 4,5,8,9,16,17 T19S-R20E;  
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SECTIONS 53,54 T18S-R21E



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DATE: MAY 2013

SHEET 6 OF 8



GOLDEN MEADOW, LA, GOLDEN MEADOW FARMS, LA,  
MINK BAYOU, LA, AND BAY COURANT, LA, QUAD MAPS

**AERIAL VIEW:**  
**PROPOSED MARSH CREATION**  
**- MITIGATION AREA**

0 5000' 10000'  
SCALE: 1"=5000'

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
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LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E;

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SECTIONS 53,54 T18S-R21E

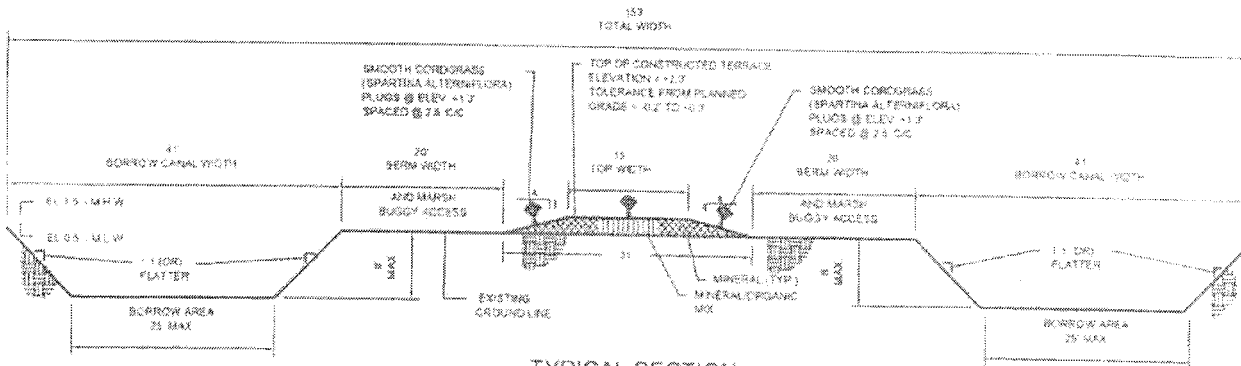


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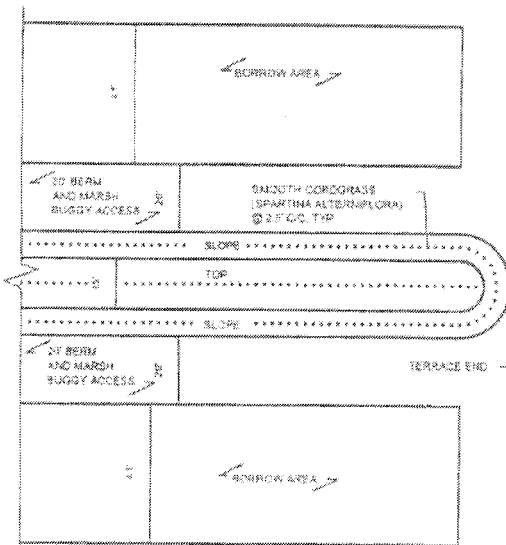
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DATE: MAY 2013

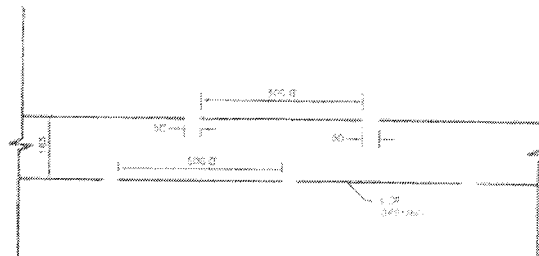
SHEET 6 OF 8



TYPICAL SECTION  
SCALE 1"=20'



TYPICAL PLAN VIEW  
SCALE 1"=50'



TYPICAL LAYOUT PLAN  
SCALE 1"=50'

#### NOTES:

1. THE MATERIAL AND NO. SECTION SHALL BE TAKEN FROM THE UPPER TWO FEET OF THE BORROW AREA AND PLACED BEFORE THE MINERAL SECTION.
2. THE SMOOTH CORDGRASS PLUGS (SPARTINA ALTERNIFLORA) SHALL BE PLANTED ON THE TERRACE FILL SLOPE AT AN ELEVATION OF +1.3.
3. ALL ELEVATIONS ARE NAVD83 DATUM.
4. ALL TERRACE SIDE SLOPES SHALL BE 4 HORIZONTAL TO 1 VERTICAL, INCLUDING TERRACE END SLOPES.
5. THE 100-FT. SPACE BETWEEN TERRACE ENDS IS MEASURED FROM THE FINISHED TOP CROWN CENTERLINE OF EACH TERRACE.

GOLDEN MEADOW, LA. GOLDEN MEADOW FARMS, LA.  
MINK BAYOU, LA. AND BAY COURANT, LA. QUAD MAPS

#### PROFILE VIEW

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
FOR THE SOUTH LAFOURCHE LEVEE DISTRICT,  
LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T18S-R20E,  
SECTIONS 13,14,15,22,27,28,33 T18S-R20E,  
SECTIONS 53,54 T18S-R21E

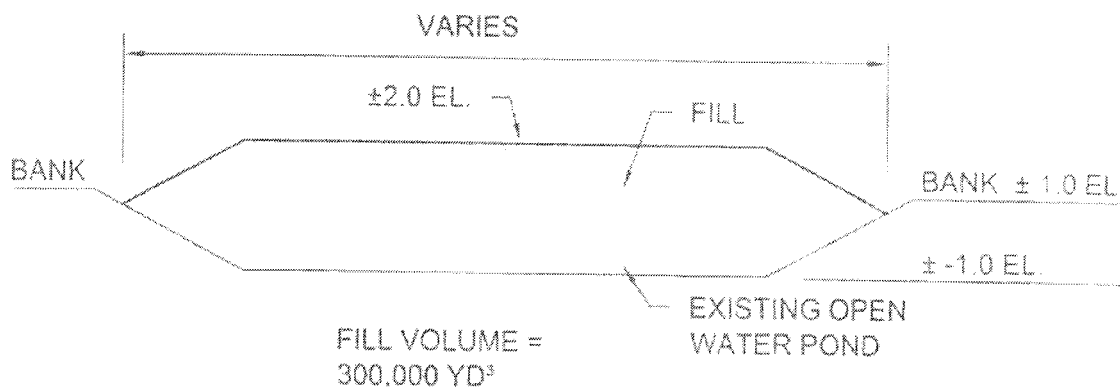


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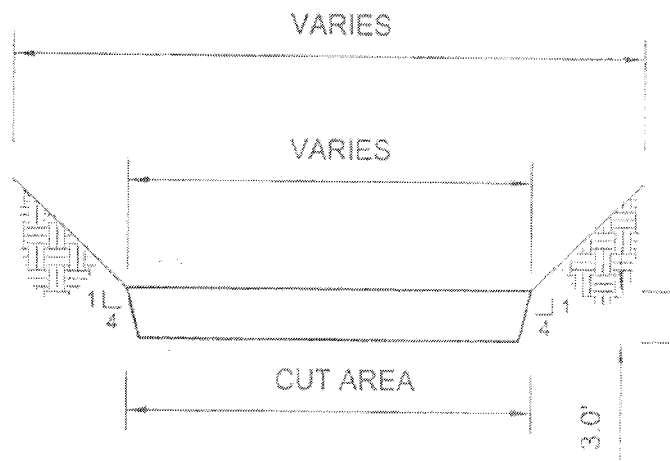
DATE: MAY 2013

SHEET 7 OF 8



### PROPOSED FILL AREA PROFILE

SCALE: 1" = 20'



### PROPOSED BORROW AREA PROFILE

SCALE: 1" = 10'

### PROPOSED FILL AREA PROFILE AND BORROW AREA PROFILE

MITIGATION PROJECT FOR THE CONSTRUCTION OF  
MORGANZA TO THE GULF (REACHES K&L) PROJECT  
FOR THE SOUTH LAFOURCHE LEVEE DISTRICT,  
LOCATED WITHIN:

SECTIONS 4,5,8,9,16,17 T19S-R20E;

SECTIONS 13,14,15,22,27,28,33 T18S-R20E;

SECTIONS 53,54 T18S-R21E



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DATE: MAY 2013

SHEET 8 OF 8